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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,550	04/06/2001	Michael W. Halpin	ASMEX.271A	4978

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EXAMINER
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ZERVIGON, RUDY

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 01/15/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n N .

09/828,550

Applicant(s)

HALPIN, MICHAEL W.

Examiner

Rudy Zervigon

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) 15-45 and 49-54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 46-48 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I, Claims 1-14, and 46-48 in Paper No. 6 is acknowledged.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "upwardly extending projection" (claim 13) must be shown or the feature canceled from the claim. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claim 12 is objected to because of the following informalities: Claims 12 recites "wherein said wherein said". Appropriate correction is required.

*Claim Rejections - 35 USC § 112*

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 13 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 13 recites “upwardly extending projection” but is not described in the specification (Page 6, lines 10-12) in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 is written in variant of a Markush form but does not provide the acceptable form of alternative expression (MPEP 2173.05(h)). “formed” should be amended to “selected” to remove ambiguity or uncertainty.

8. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural

cooperative relationships are: How the “upwardly extending projection” is positioned on the “support device”.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

10. Claims 1-3, 9, 12, and 46 are rejected under 35 U.S.C. 102(e)<sup>i</sup> as being anticipated by Johnsgard et al (USPat. 6,342,691). Johnsgard teaches a semiconductor (106; Figure 1; column 14, lines 20-35) processing apparatus (Figure 1; column 14, lines 20-35) comprising:

- i. a reaction chamber (100; Figure 1; column 14, lines 20-35) and plural vitreous quartz components (130A-H; column 16, lines 54-60) having an outer surface that is covered at least in part by a devitrification barrier coating made of silicon nitride (column 17, lines 23-30)
- ii. the devitrification barrier coating covers at least a portion of a quartz sheath (130D, E, H; Figure 6; column 16, lines 52-65) of a thermocouple (610; Figure 6; column 16, lines 8-25)

11. Claims 1-4, 9-14, and 47 rejected under 35 U.S.C. 102(e) as being clearly anticipated by Wengert (USPat. 6,325,858). Wengert teaches identical component parts (Figure 1) including vitreous quartz components (column 7, lines 19-22) and coated over with silicon nitride devitreous “shields” (column 7, lines 19-30).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 4, 11, 13, 14, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnsgard et al (USPat. 6,342,691) in view of Shih et al (USPat. 6,120,640). Johnsgard is discussed above. Johnsgard further teaches the apparatus further comprises an upwardly extending projection (110; Figure 1; column 14, lines 35-40) positioned on a support device (116), the projection and support device configured to support a substrate (106) within the apparatus (100).

Johnsgard does not teach the manner in which the devitrification barrier is coated by CVD. Johnsgard does not teach the thickness of the devitrification barrier or that the devitrification barrier covers only a portion of the vitreous components. Johnsgard does not teach that the projection being covered at least in part by the devitrification barrier coating.

Shih teaches protective barrier films for plasma facing components of reactor parts (column 5, lines 14-43). Specifically, Shih teaches the manner in which a silicon nitride (column 10, lines 50-55) devitrification barrier is coated by CVD. Shih teaches that the projection being covered at least in part by the devitrification barrier coating (column 5, lines 14-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Johnsgard to deposit his silicon nitride devitrification barrier coating by CVD over portions of his quartz vitrification parts as taught by Shih.

Motivation for Johnsgard to deposit his silicon nitride devitrification barrier coating by CVD over portions of his quartz vitrification parts as taught by Shih is drawn to an alternate and equivalent means for coating Johnsgard's silicon nitride devitrification barrier.

14. Claims 5-8, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnsgard et al (USPat. 6,342,691) in view of Atsushi Koike (USPat. 5,065,698). Johnsgard is discussed above. Johnsgard does not teach the thickness of the devitrification barrier and that the devitrification barrier is deposited by sputtering. Atsushi Koike teaches a film forming apparatus (301; Figure 3) for sputter depositing silicon nitride (column 8, lines 10-20) to a thickness of 800 angstrom (column 10, lines 20-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Johnsgard to deposit his silicon nitride devitrification barrier coating to a thickness of 800 angstrom by sputter coating his quartz vitrification parts as taught by Atsushi Koike.

Motivation for Johnsgard to deposit his silicon nitride devitrification barrier coating to a thickness of 800 angstrom by sputter coating his quartz vitrification parts as taught by Atsushi Koike is drawn to an alternate and equivalent means for coating Johnsgard's silicon nitride devitrification barrier.

15. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being obvious over Wengert et al (USPat. 6,325,858).

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was

derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Wengert is discussed above. Wengert does not teach the thickness of the devitrification barrier.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Wengert to deposit the devitrification barrier to within the range of the claimed thickness.

Motivation for Wengert to deposit the devitrification barrier to within the range of the claimed thickness is drawn to establishing the optimal thickness for the silicon nitride devitrification barrier. Further, it would be obvious to those of ordinary skill in the art to optimize the thickness of the silicon nitride devitrification barrier. (In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980); In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969); Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); In re Kulling, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990), MPEP 2144.05).



16. Claims 46 and 48 are rejected under 35 U.S.C. 103(a) as being obvious over Wengert et al (USPat. 6,325,858) in view of Atsushi Koike (USPat. 5,065,698).

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Wengert is discussed above. Wengert does not teach the thickness of the devitrification barrier and that the devitrification barrier is deposited by sputtering. Atsushi Koike teaches a film forming apparatus (301; Figure 3) for sputter depositing silicon nitride (column 8, lines 10-20) to a thickness of 800 angstrom (column 10, lines 20-26).

Art Unit: 1763

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Wengert to deposit his silicon nitride devitrification barrier coating to a thickness of 800 angstrom by sputter coating his quartz vitrification parts as taught by Atsushi Koike.

Motivation for Wengert to deposit his silicon nitride devitrification barrier coating to a thickness of 800 angstrom by sputter coating his quartz vitrification parts as taught by Atsushi Koike is drawn to an alternate and equivalent means for coating Johnsgard's silicon nitride devitrification barrier.

### *Conclusion*

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPat. 6,056,823; 5,910,221; 5,788,799; 5,904,778; 6,170,429; 6,066,209; 6,129,808; 6,227,140; 5,271,967; 5,493,987; 5,104,514; US 2002/0086118 A1

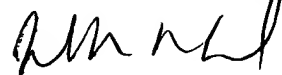
J. Linke and E. Vietzke, " Behavior of Boron Doped Graphites, Plasma Sprayed Boron Carbides and a-C/B:H as Plasma Facing Material ", J. Fusion Tech. V.20, pp. 228-231, Sep. 1991.

Srihari Ponnekanti et al, "Failure mechanisms of anodized aluminum parts used in chemical vapor deposition chambers", J. Vac. Sci. Technol. A 14(3), May 1, 1996.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (703) 305-1351. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official after final fax phone number for the 1763 art unit is (703) 872-9311. The official before final fax phone number for the 1763 art unit is (703) 872-9310. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (703) 308-0661. If the examiner

Art Unit: 1763

can not be reached please contact the examiner's supervisor, Gregory L. Mills, at (703) 308-1633.



JEFFRIE R. LUND  
PRIMARY EXAMINER

**<sup>i</sup> Recent Statutory Changes to 35 U.S.C. § 102(e)**

**On November 2, 2002, President Bush signed the 21st Century Department of Justice Appropriations Authorization Act (H.R. 2215) (Pub. L. 107-273, 116 Stat. 1758 (2002)), which further amended 35 U.S.C. § 102(e), as revised by the American Inventors Protection Act of 1999 (AIPA) (Pub. L. 106-113, 113 Stat. 1501 (1999)). The revised provisions in 35 U.S.C. § 102(e) are completely retroactive and effective immediately for all applications being examined or patents being reexamined. Until all of the Office's automated systems are updated to reflect the revised statute, citation to the revised statute in Office actions is provided by this attachment. This attachment also substitutes for any citation of the text of 35 U.S.C. § 102(e), if made, in the attached Office action.**

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 in view of the AIPA and H.R. 2215 that forms the basis for the rejections under this section made in the attached Office action:

**A person shall be entitled to a patent unless –**

**(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.**

35 U.S.C. § 102(e), as revised by the AIPA and H.R. 2215, applies to all qualifying references, except when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. For such patents, the prior art date is determined under 35 U.S.C. § 102(e) as it existed prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 prior to the amendment by the AIPA that forms the basis for the rejections under this section made in the attached Office action:

Art Unit: 1763

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**A person shall be entitled to a patent unless –**

**(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.**

For more information on revised 35 U.S.C. § 102(e) visit the USPTO website at [www.uspto.gov](http://www.uspto.gov) or call the Office of Patent Legal Administration at (703) 305-1622.